

## **Impact of Covid-19 on the Aviation Industry: A Comparison between South Asian and Other Asian Regions**

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### **Abstract**

One of the most affected global industries due to the COVID-19 pandemic is the Aviation Industry. Interestingly, at the same time, the Aviation Industry is also responsible for spreading the virus globally. The immediate effect is evident as Asian, European, and American carriers' revenues are in free fall as travel restrictions mount. On 5 March, the Air Transport Association (IATA) projected a deadly hit on the global aviation industry up to \$113 billion in 2020 which is one-fifth of 2019's total revenues and four times higher than IATA estimates in February 2020. This research attempts to highlight the magnitude of the Aviation Industry's loss employing South Asia as a case study, and it contrasts the situation with certain other Asian regions by illustrating secondary data and information accessible till November 18, 2020. This paper applies a systematic review of the literature and descriptive statistics as the methodology to achieve the objective. The analysis revealed that the COVID-19 pandemic has substantially affected the revenues, personnel, and flying capacity of

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key airline companies in South Asia. South Asia lost more aviation capacity than the region of North-East Asia, but less than Southeast Asia.

**Keywords:** COVID-19; Aviation industry; IATA; South Asia; Asia; Major Airlines

### 1.0 Introduction

Epidemics are undesirable because of their adverse consequences for the world economy. The world economy has experienced a slowdown due to previous epidemics like SARS and MERS. SARS appeared in 2003 in China and MERS in 2012 in Saudi Arabia while COVID-19 recently appeared in China and killed thousands of people around the world. Contagious diseases severely affect the aviation industry severely as people try to avoid other people in cases of such outbreaks. According to Lee, the greatest impact of epidemics would be in human resource management (HRM) in the service industries. Airline companies observed a negative impact on their demand-side after the 9/11/2001 periods, Afghanistan, and the Arabian Gulf Wars and During the SARS outbreak (Mason 2005). In 2003, the World economy experienced major economic devastation due to the SARS outbreak (Wilder-Smith et al., 2020).

Since 2012, MERS-CoV cases have increased in the Middle East, of which approximately 70 percent are found in the kingdom of Saudi Arabia. With the increasing volume of the passengers, there is significant risk of spreading the virus and of exposing the employees (Ibrahim, 2014). Saudi Arabia recommended that people under 12 years old and above 65 years old should not attend Hajj and Umrah in 2012-2013 and 2013-2014 due to the risk of MERS (Al-Tawfiq et al., 2014). A similar situation occurred as Saudi Arabia imposed a ban on Umrah and the future of Hajj became uncertain owing to COVID-19 in 2020 as well.

According to World meter, COVID-19 spread in 221 countries around the world. As a result, most of the economies have closed their borders totally, and the rest of the economies are on their way to following this process. According to the International Air Transportation Association (IATA), revenue passenger kilometers (RPKs), which estimate

passenger air traffic, was down 90 percent year-on-year in April and still down 75 percent in August. Freight, which was almost 30 percent lower year-on-year in April and still about 12 percent lower in August, was affected by the collapse in economic activity and trade. This epidemic certainly affected the aviation sector of the whole world. International passenger demand announced by the association was down 88.8 percent year-over-year, relatively unchanged from the 88.5 percent decrease registered in August 2020. Although, domestic demand declined 43.3 percent in September 2020 compared to 2019. This marked an improvement from a fall of 50.7 percent in August. Nevertheless, the ASQ Global Traveler Survey showed that 48 percent of respondents, depending on the implementation of new health and safety initiatives, found themselves likely to travel over the next three months (*ASQ 2020 Global Traveller Survey*, 2020).

This study exhibits the situation of the South Asian airline industry, mainly Bangladesh, India, Pakistan, and Sri Lanka using the data from various sources till November 18, 2020. It also incorporates a comparative analysis among the other region of Asia.

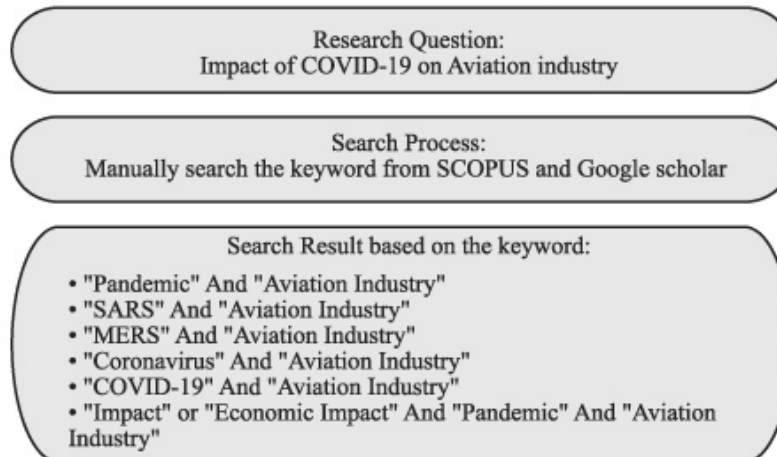
The organization of the rest of the paper is as follows. Section 2 represents the methodology of the study. Relevant literature is discussed in section 3. Data sources of this study are mentioned in section 4. Section 5 analyzes the findings of the paper and post-COVID implications for the South Asian context. Section 5 comprises 5 subsections. Section 5.1 covers a case study of the South Asian avian industry during the time taken into consideration. Section 5.2 discusses the workforce crisis due to the COVID-19 pandemic. Section 5.3 discusses governments' responses across the countries during this period. Section 5.4 compares the South Asian avian industry situation with others of the Asian regions. Some post-COVID implications for the South Asian Countries are figured out in section 5.5. The final section concludes the entire paper.

## **2.0 Methodology**

This paper mainly comprises three segments. The first part sums up the existing literature from all existing articles related to aviation and recent pandemics, the second part depicts a case study on major airline

companies in South Asia, and the third part covers the descriptive analysis. For the literature review, the search criteria consisted of a manual search of specific conference proceedings and journal papers since 2000 related to the keywords of this study. After searching through the keywords in SCOPUS, EBSCO Information, and Google scholar we observed that very few articles match our research topic. Only “Pandemic (SARS, MERS, COVID-19)” and “Aviation Industry” have some article matches which were also very limited in numbers. Figure 01 shows the steps of the literature review process. The second part is based on a case study on the major airlines in South Asia. According to the suggestion of Creswell, we have bound the case from January 2020 to June 2020 and in the South Asia region. Here we use a descriptive case study (Yin, 2003). In the following part, this study applies the tabular and graphical analysis to show the impact of COVID-19 on the major global aviation industry of South Asia and to compare it with the other Asian region. On the other hand, we apply graphical representation to analyze the region-wise effect on airlines’ flight capacity, from where we can compare the South Asia region with the other region of Asia. We also reviewed the available data, newspaper articles to portray the global situation in the passenger demand revenues, and responses by the corresponding governments.

**Figure 1:** The flowchart of the literature review process



**Inclusion Criteria:**

Review Papers, specific conference proceedings and Research papers are included and year 2000-2020

**Exclusion Criteria:**

Duplicate reports of the same study (when several reports of a study exist in different journals the most complete version of the study was included in the study).

**3.0 Literature Review**

SARS disrupted travel, tourism, and retail sales, causing Asian countries to lose USD 12–18 billion (Qiu et al., 2018). SARS had a worldwide macroeconomic effect of roughly USD 30–100 billion, or around USD 3–10 million each case, according to estimates. The SARS pandemic in 2003 resulted in massive losses of USD 12.3–28.4 billion, a 0.5 percent drop in China's GDP, and a 1 percent drop in Southeast Asia's GDP. In Guangzhou, the social impact of SARS resulted in lower income and expenditure, with an estimated overall economic cost of RMB 11 billion. The H7N9 outbreak in April 2013 led the price index of meat, poultry, and their products to decrease to 101.5 year on year, resulting in a loss of more than RMB 40 billion for China's poultry sector. Wilder-Smith et al. (2003) examined data from flights to Singapore with SARS patients on board to determine the risk of SARS transmission on airlines. It was expected that one out of every 156 people was affected.

Quarantine has a significant role in coronavirus control, according to Khan et al. (2020). However, due to the spread of the virus in the majority of the world's countries, which has killed many people and harmed the economy, all quarantine sectors throughout the globe have failed to function correctly, and there is a risk of the global economy collapsing if the period is extended. The travel quarantine surrounding Wuhan city, according to Chinazzi et al. (2020), had only modestly slowed the spread of the pandemic. Chinazzi et al. (2020) use the global metapopulation disease transmission model to find that the Wuhan travel bans effectively reduced the importations of international cases at first, but that after 2-3 weeks, the number of

cases outside of Mainland China will take up the growth from cases that originated elsewhere. Without public health efforts and behavioral improvements that significantly decreased illness transmissibility, additional travel restrictions of up to 90 percent of transportation would have just a little impact. Even though travel to and from Mainland China has been restricted since January 23, 2020, many persons infected with SARS-CoV-2 have been traveling nationally and globally without being discovered.

Adiga et al. (2020) discovered that the arrival times of COVID-19 patients had a relatively strong linear association. The authors also point out that the majority of the countries are developed economies with a high Infectious Disease Vulnerability Index (IDVI). The reasons for this are that developed economies have better air traffic and connection, particularly to China, and they are better able to detect and report imported cases than others. Iacus et al. (2020) utilized a non-homogeneous Poisson process to estimate that, in the absence of Coronavirus, the number of monthly passengers in the period January to March 2020 would have been about 43.9 million on average. Almost 83 percent of the traffic was sent to Chinese airports. In the absence of the Coronavirus epidemic, they predicted a rise in the number of passengers on flights outside of China, with a monthly distribution comparable to prior years. However, due to the Coronavirus epidemic, all flights originating in China are projected to be reduced by -4 million passengers from January to March 2020, equivalent to -2.5 percent of the planned volume of traffic. The decrease in passenger numbers is primarily occurring within China (-2.6 percent). The UK saw the greatest drop in absolute terms, with -6 thousand passengers (-1.6per cent), followed by France (-2.3per cent), Italy (-1.6per cent), and Germany (-1.6per cent) (Iacus et al., 2020).

China's inflation rate for products has reached 50percent as a result of this pandemic, and the country's economic development has slowed to 2percent from 6percent in the past, while the country's economy would be more harmed in the long run(Khan & Faisal, 2020). China's exports and imports have decreased, which has had a significant impact on global economic growth while China's economy has been badly impacted. According to Bloomberg Economics, if China's economy slows to 1.2 percent in the first quarter of this year, India may suffer a

demand-side GDP shock of approximately 0.4-0.5 percent (Koshle et al., 2020). This is because India's total electronic imports account for 45 percent of China's total. China provides India with around 33percent of its equipment and nearly two-fifths of its natural-synthetic chemicals. China's offer in India's import of car components and manures is over 25percent. China imports around 65 percent to 70 percent of dynamic pharmaceutical fixes and 90 percent of some cell phones in India. In China, about 72 percent of businesses are in cities like Shanghai and Beijing, as well as the provinces of Guangdong, Jiangsu, and Shandong. These businesses work in a variety of industries, including industrial assembly, manufacturing administrations, IT and BPO, logistics, chemicals, airlines, and thus the travel industry.

#### **4.0 Data Sources**

The analysis carried out in this part is mostly based on secondary data. Data is obtained from the International Air Transport Association (IATA) and Official Aviation Guide of the Airways (OAG). Moreover, various online news portals and articles were studied to analyze the current situation of the Avian Industry due to the COVID-19 outbreak. Data has been taken from January 2020 to November 18, 2020.

#### **5.0 Results**

The result section is divided into three parts. The first part analyzes a case study on the major South Asian airlines to explore the situation of flight capacity, and revenue earnings during this global pandemic. The second part provides the findings of a comparative analysis of the consequences of this global pandemic on South Asia and other major global airline companies of Asia. And the final part of this section discusses the workforce crisis during these periods.

##### **5.1 South Asian Case Study**

###### *5.1.1 Bangladesh Airlines*

On March 21, 2020, Bangladesh canceled all the international passenger flights with ten countries- Malaysia, Oman, Singapore, Qatar, Kuwait, Saudi Arabia, The United Arab Emirates (UAE),

Turkey, India, and Bahrain which was later extended to restrict spreading the pandemic (Hoque, 2020). From June 1, the government decided to restart flights on a limited scale with passengers not more than 50 percent of the total capacity but due to an insufficient number of passengers, the airline had to cancel most of their flights. The important fact, in this case, is the reason behind the inadequate passengers is not just the COVID-19 pandemic but also its higher price than the country's private airline companies. Before October, International flights were performed at a 40 percent loss in capacity. In August, domestic traffic plummeted 50.9 percent, which was a mild increase relative to July's 56.9 percent fall (Alo, 2020). Domestic capacity dropped by 34.5 percent, and the load factor fell by 21.5 percentage points to 64.2 percent, according to IATA.

IATA predicted that in 2020, Covid-19 could result a 9 percent loss in passenger volumes in Bangladesh. Passenger losses would wipe out airline operators' revenues of \$190 million or Tk16,150 million in a single year in 2020. Due to a cut of 70 percent of flights around the world, Biman Bangladesh Airlines has faced TK 9,390 million loss since May. In the meantime, Bangladesh faced a loss of TK 13,610 million because of the ban on all commercial flights. Biman had to cut more than 150 flights among 218 flights on international routes so far. Following the global flight reduction, Biman was compelled to cut domestic flights also as the coronavirus fear hurt business in local routes.

Moreover, more than 60 percent of its international flights have been cut by the US-Bangla, the country's largest private local airline (Alo, 2020). Because of this, in January and February 2020, they had to experience a loss of BDT 250-300 million (\$29.40-35.27 million) on average. The company has also deteriorated in domestic flights. Because of the COVID-19 outbreak, the overall number of US-Bangla passengers dropped by 25-30 percent.

#### *5.1.2 Indian Airlines*

Even before the pandemic, India was one of the most challenging places for the aviation industry, with fares of as little as 2 cents and some of the world's highest fuel taxes. Local traffic has slumped by almost 80 percent to just 12 million passengers in the five months to



July 31, eroding airline revenues, according to Civil Aviation Minister Hardeep Singh Puri. India is the second-worst country affected by the pandemic worldwide, adding more than 90,000 cases per day and touching more than 5 million confirmed on September 16 infections (Kotoky, 2020).

Regulated by Inter Globe Aviation Ltd., IndiGo dominates the local market with a share of nearly 60.4 percent in July (Dhanjal, 2020). For Airbus SE's best-selling A320neo jets, IndiGo is the world's largest customer, while SpiceJet is one of the biggest buyers of the now grounded 737 Max aircraft from Boeing Company (Anurag, 2020).

As a result of the pandemic, the Indian aviation market could suffer estimated losses of up to \$11,221 million, the International Air Transport Association (IATA) reported. Compared with the previous year, India experienced a 71.5 percent decrease in scheduled flight capacity on 22 June (OAG). In July and September 2020, IndiGo announced a loss of INR 11,948 million. The airline experienced a loss of INR 10,620 million in Q2 last fiscal year, lost INR 2,844 crore in April-June, and lost a total of INR 40,390 million in the first six months of this fiscal year, which is over INR 220 million per day. The IndiGo scrip closed at INR 1,333.25 while the border market was down 0.4 percent, up 3.1 percent on BSE. The airline observed a 64.5 percent decrease in its net revenue and a 56 percent drop in total costs ("IndiGo Lost 22cr Daily in 6 Months, CEO Says They Are 'impatiently' Waiting for the Future - ET TravelWorld," 2020). In a move to cut costs, Air India will no longer fly to Milan, Madrid, Vienna, Copenhagen, and Stockholm since August 13. The airline has not flown to these destinations for months and has now decided to close its bases in these cities (Mulfati, 2020).

### *5.1.3 Pakistan Airlines*

Following the coronavirus outbreak, Pakistan has suspended its flight operations to China, Iran, Qatar, and Italy since March and increased its range in the next few months (Sajid, 2020). The Pakistan International Airline (PIA) lost 1.2 billion rupees (\$7.6 million) in February-March last year due to the suspension of flights to various countries. The Civil Aviation Authority (CAA) also lost 1.2 billion rupees (\$7.6 million) in the second week of March, according to the

country's federal minister for aviation (Sajid, 2020). In the first weeks of March, PIA lost Rs8.5 billion, while CAA lost more than Rs4.5 billion (Ahmed, 2020).

During April-July, the Pakistan aviation industry suffered a loss of over 30.5 billion rupees due to reduced flight operations (Xinhua, 2020). An official in the Aviation Ministry said that the loss by the national airlines was estimated at Rs 45 billion (\$276 million) from January to October due to the cancellation of license flights and the Covid-19 pandemic (Shakil, 2020). Due to the suspension of flight operations, Pakistan lost \$15 million to its state-owned airlines and the aviation industry from January to March. Data show that the suspension of Hajj and Umrah flights to and from Saudi Arabia resulted in a loss of Rs12 billion (\$73.6 million) for the airline. In comparison, the ban on flights to Europe resulted in an approximate loss of Rs33 billion (\$202.4 million) as 32 weekly flights to Europe and other Western countries were suspended.

Following the decline in new cases of COVID-19 in Pakistan, the number of foreign flights passing through Pakistan's airspace has reached more than 350 a day, the authority reported, adding that it received 490 million rupees after 4,138 flights traveled through the airspace during the second half of August (Xinhua, 2020).

In the first week of September, a total of 1,886 flights used Pakistan's airspace, after a rise in the landing and take-off of aircraft by international airlines was observed soon after the country's aviation industry implemented effective policies under the World Health Organization guidelines aimed at curbing the spread of COVID-19.

After a significant decline in new COVID-19 cases in the region, the Civil Aviation Authority (CAA) of Pakistan announced a surge in overflight revenue in September. The authority's overflight revenue increased significantly to 30 million rupees per day thanks to a rise in air transport after reopening the airspace for overseas flights in the first week of September.

#### *5.14 Sri Lankan Airlines*

The aviation industry in Sri Lanka is prone to losing \$715 million in revenue. Passenger demand is also likely to decrease by 58 percent

relative to last year, according to IATA. The effect on passenger demand is most likely to cause tourism problems, which is the primary revenue-generating industry in Sri Lanka. In March, a government study reported a paltry 70,000 tourist arrivals before Sri Lanka closed its doors for arrivals to stop the virus from spreading (“Sri Lanka’s Aviation Industry to Lose USD 715 Mn Due to COVID-19,” 2020).

Sri Lankan Airlines started to lose money under state management, in 2008. Losses would total 232 billion rupees by March 2020, including 115 million dollars paid to cancel a controversial Airbus deal.

But the coronavirus situation in Sri Lanka seems like under control since June. Out of a little over 2,000 positive cases in May, Sri Lanka reported only 11 deaths, with no deaths until June 1.

Sri Lankan Airlines surveyed its FlySmiLes loyalty members based on their experiences before September to capture how the COVID-19 pandemic has influenced their views and feelings on travel. The survey included co-branded credit card holders from the top tiers of Platinum, Gold, Classic & Silver. For three weeks, the survey received input from over 5,500 travelers. The geographical distribution of the survey respondents includes Sri Lanka (42.3 percent), South Asia (22 percent), Europe (20 percent), South Pacific (4.5 percent), Maldives (4 percent), North America (3.2 percent), the Far East (2 percent) & Japan & Korea (0.9 percent).

It is good news for Sri Lankan Airlines and the Sri Lankan travel trade to note that after the government restrictions on COVID-19 travel are lifted, 75 percent of travelers are hopeful that they will begin travel within 03 months pandemic. Thirty-five percent of passengers suggested that if social distancing were implemented when traveling, they would be reassured in comparison, 42 percent of passengers’ most significant concern is government restrictions on travel if they want to commence travel post (*SriLankan Airlines Completes a Post COVID-19 Traveler Sentiment Survey*, 2020).

A variety of additional steps have been introduced for the provision of COVID-19 preventive services at Sri Lankan airports and on-board flights. Such procedures require extensive cleaning of ticket offices, check-in, boarding gates, and onboard cleaning. Wherever possible, social distancing is practiced, and masks are to be worn. The safety of

its passengers and workers is the priority of the National Carrier.

## **5.2 Workforce Crisis**

According to an estimate from the International Air Transport Association (IATA), the coronavirus outbreak could result in 11,600 job losses in Bangladesh's aviation industry. Biman Bangladesh Airlines, the national carrier of the country, had to cut its employees' salaries by 10 to 50 percent in response to the loss and canceled overtime and other extra benefits. Its 5,173 employees were affected by the cut in pay and other services. Before the pandemic situation, 129,000 jobs were being funded by the aviation industry, and IATA expects to add 140,000 more jobs by 2038 amid faster industry growth. However, the coronavirus has caused the industry to stray from its growth curve, raising concern about a work loss of 9 percent instead of generating new jobs, IATA says.

Nearly 3 million jobs in the aviation and related industries and more than \$11 billion in revenue may be lost in India this year due to the pandemic, according to the International Air Transport Organization. The report estimated that 29 lakh employees could experience possible job losses in the Indian aviation industry, which was the highest among 27 Asia-Pacific countries (IATA, 2020). In the face of reduced travel demand, IndiGo trimmed 10 percent of staff as part of a \$510 million cost-cutting program, placing 2,400 jobs at risk. According to the data, by the end of FY19, the airline had 23,531 employees on its payroll (Majumder, 2020). In the meantime, Air India is tasking top management with the task of choosing staff to be sent on compulsory leave without pay for up to five years. Already, this year, Air India alone has let 48 pilots go (Rai, 2020).

In an effort to reduce the bulging deficit, Pakistan International Airlines (PIA) is expected to lay off 3,000 employees and sell its non-core assets overseas, knee-deep in a financial crisis due to the coronavirus pandemic, bogus pilot license problems, and overall mismanagement (Shakil, 2020). According to IATA, Pakistan could lose more than 2.5 lakh personnel potential jobs in the aviation industry.

Due to the effect of the novel coronavirus, the Sri Lankan avian

industry is expected to lose more than 400,000 jobs this year, a global air transport body has cautioned. According to IATA, the effect caused by travel restrictions on the Sri Lankan aviation industry could result in the loss of 408,200 jobs.

Table 1 indicates the significant effect of COVID-19 on the aviation industry of these four South Asian nations. We can see that, due to the pandemic followed by Pakistan, Bangladesh, and India, Sri Lanka faces the largest drop in passenger demand. At the same time, India has experienced the most enormous revenue effect among the countries.

Table 1: Country Impact on Aviation Industry due to COVID-19

Country	Percentage Change in passenger demand (2020 Vs. 2019)	Passenger Demand Impact (Origin-Destination Volumes - 2020 Vs. 2019)	Revenue Impact (Us\$, Millions - 2020 Vs. 2019)	Potential Jobs Impact
Bangladesh	-48	-5,541,000	-1,073	-61,900
India	-47	-89,764,000	-11,221	-2,932,900
Pakistan	-52	-9,866,000	-1,829	-259,400
Sri Lanka	-58	-4,049,000	-715	-408,200

Source: IATA (April 2020)

### 5.3 Government Responses

The state ownership of airlines with reported government funding from India and Bangladesh is 100 percent (Abate et al., 2020). For the January to March quarter of 2021, Indian airlines are expected to record a loss of US\$3.3-3.6 billion as most of the flight services remain grounded till June-end, according to CAPA India. The Government of India is preparing a rescue package for the aviation industry for as much as 120 billion (US\$1.6 billion). According to the Economic Times, the Indian Ministry of Civil Aviation's planned

rescue plan is likely to be worth up to 100-120 billion rupees (\$1.3-\$1.6 billion). Indian airlines need as much as \$2.5 billion to keep running, according to estimates from the Sydney-based CAPA Centre for Aviation. In the absence of extra funding from the government or its operators, one or more of the nation's airlines are likely to fail.

Sonali Bank Limited, a state-owned bank of Bangladesh, has given TK 1,000 crore as a loan to Biman Bangladesh Airlines under the government-announced stimulus package for the coronavirus-affected industries and the service sector. Even after receiving financial support of Tk1,000 crore from the government stimulus package, Biman was still unable to recover its business.

The Pakistan government has turned its attention to job cuts and the sale of properties to scale down the PIA's operational losses after injecting billions in cash bailouts year after year to build up the company's sliding finances. PIA's employee-to-aircraft ratio is one of the highest in the world, being significantly overstaffed with around 15,000 employees for a fleet of 32 aircraft. PIA had a ratio of over 480, which speaks volumes for the perennial losses and financial sustainability of the airline, against the average percentage of around 150-200 employees per aircraft (Shakil, 2020). According to *The Nation* report, a comprehensive proposal to restructure PIA and the Civil Aviation Authority (CAA) is stated to have been approved by Prime Minister Imran Khan by placing a reform agenda on the fast track on 8 June ("Imran Khan Wants to Restructure PIA," 2020). The steps, including the disposal of assets and the reduction of employees, the government believes, would make the airline self-reliant and put financial discipline into action. However, several small businesses in the aviation and tourism sectors may be eligible for some of the incentives that are not large enough from the stimulus packages. Examples of general support for all companies are tax concessions and exemptions rather than airline-specific financial support. To date, Pakistan has announced stimulus packages estimated at \$5 billion (Sobie, 2020). However, in these bundles, there are no aviation-specific advantages. The relief given in Pakistan is directed primarily at workers, low-income families, agriculture, medical equipment, and small businesses.

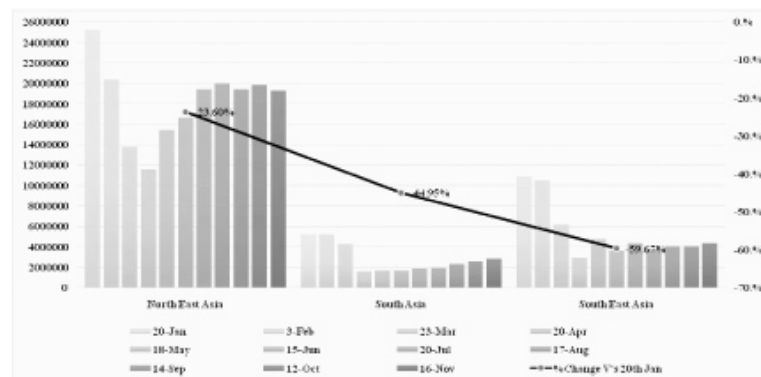
Ashok Pathirage, Chairman of Sri Lankan Airline, demanded a \$300

million capital injection from the state to avoid a debt spiral, the *Economy Next* business news site posted. The plan to fund state-run Sri Lankan Airlines, which was badly hit by the Coronavirus crisis, was cleared by the Sri Lankan Cabinet of Ministers. Rs. 400 million was allocated by the Government of Sri Lanka to distribute Rs. 5,000 each to those who lost their income due to curfews in specific districts due to the COVID-19 pandemic in October 2020 during the second wave.

#### 5.4 Comparative Analysis of Flight Capacity

Finally, we have demonstrated the reduction in Flight capacity of the Asia region during the period (Jan 20 to Nov 15) using graphical representation (see Figure 2). Figure 2 highlights that the airline capacity is dropping for every region from the starting of the year until April. From May, it seems to recover from the worst month of April though even none of the regions can recover their previous position. On 16<sup>th</sup> November, Flight Capacity in Southeast Asia was 59.67percent less than January 20, which is a higher capacity decline than the other regions of Asia during this time. South Asia also experienced a huge capacity drop, which is around 44.95percent less than January 20, which brings it to the second position in the list of most flight capacity lost regions of Asia. North-East Asia faced less loss than in the other two regions.

Figure 2: Region-wise Scheduled Flight Capacity (20 Jan-16 Nov)



Source: OAG Schedules Analyzer

### **5.5 Post-COVID Implications - South Asia Context**

It is uncertain when everything will be normal again. The shortest projected average recovery time of 2.2 years is in the Asia-Pacific (Santos, 2020). Until the pandemic is finally gone, travel restrictions and border controls will continue. It will surely change consumer behavior and attitude. People will be more concerned about health and sanitation than every other thing. So, it is obvious that there will be some changes in business travel policies. The aviation industry must be prepared for the post-COVID situation by restructuring the industry.

In the shortterm, the company should redouble efforts to increase organizational productivity and effectiveness and enhance human capital. In the medium to longer-term, the company might have to consider the customer value drivers, service delivery, and work processes. The priority for governments should be to maintain the dynamics of business in the aviation industry.

The flexible and agile network recovery plan, ensuring operational readiness for restart, engagement with governments and industry partners for a coordinated recovery response are the main things that should be focused on for the airlines which are on their way to bankruptcy due to the pandemic. To regain the customers' trust and to capture future growth opportunities, airline companies must ensure a strong and trusted brand value, talented and committed staff, and strong digital capabilities which is essential for the post-COVID world. Policy initiatives should stimulate investment to boost the aviation industry's sustainability and address the entire supply chain of aviation, including the manufacturers and airports of aircraft and engines.

Standardized prevention and immunization measures and procedures should be taken to prevent the spread of COVID-19 and protect the aviation sector. ACI and IATA mutually set out a pathway for restarting the aviation sector under the title "Safely Restarting Aviation - ACI and IATA Joint Approach." Airlines and airports must be partnered closely to develop a plan to restore operations that reassures safety in travels with good health. These measures include the use of health declaration cards for all departing and arriving passengers and



for temperature screening at both ends of any route that touched a COVID-19 affected area. This step is important to make sure that the pandemic situation cannot come back and spread again through the airline sector.

The government should unveil a rescue package for the severely affected aviation industry, including airlines, cruise operators, and employers/employees. A short-term financing program for local SMEs in COVID-19 affected airlines would help the airlines to run their operating cost. Risk transfer mechanisms, such as risk pooling and sovereign-level catastrophe insurance, provide a viable option for managing pandemic risk. Risk-based insurance products are increasingly deployed for remediation and reconstruction costs following natural catastrophes such as hurricanes, floods, and droughts. Insurance products for epidemics and pandemics require specific characteristics. Moreover, International donors should come up to extend their help for the dying airlines, especially from the sources of the World Bank, IMF, European Commission, and WHO.

### **6.1 Conclusion and Recommendations**

The purpose of this paper was to evaluate and describe the potential impacts of the COVID-19 outbreak on the South Asian aviation industry and to compare it with the other Asian region. For this purpose, we have focused on the flight capacity of major airlines both country-wise and region-wise. The study follows four different steps to analyze the impact of COVID-19 including a systematic literature review, The South Asian aviation industry case study, the Employment crisis due to the COVID-19, and a comparative analysis between the major airlines of the South Asian region and the other Asian region. The analysis is based on recent secondary data obtained from reliable sources.

The analysis revealed that the South Asian Aviation Industry has faced severe losses owing to the COVID-19 outbreak. The flight capacity of the major airlines has been declined drastically. Overall revenues have been hard hit by the COVID-19 outbreak and all major airlines have asked for bailout packages from their respected governments. Consequently, some of the working force of the Aviation Industry has

been asked to apply for leave without pay and further salaries of the officers have been cut drastically which is an alarming situation.

It is imperative from the analysis of both the case study and secondary data that if more airlines start to fail, that will have knock-on effects throughout the broader aviation industry. Perhaps the greatest uncertainty concerns shifting attitudes to business and leisure travel. The silver lining is only showing if the recovery is swift, however. The longer the pandemic lasts, the longer the restriction will continue and the more worsen the situation will be for the aviation sector. In a worrying sign, the world economy is significantly dependent on the aviation industry and pandemics like COVID-19 will not only destroy the aviation market but also severely cause a significant downturn of the South Asian economic growth, and more specifically tourism and travel industry growth. At the current stage, we can only hope for the best and prepare for recovery once the pandemic is under control.

## 6.2 Limitations and Scope for Future Research

In this study, we did not use any econometrical model or empirical analysis. The dataset was small as we have just spent nine months after COVID-19 hit first. The future researcher can work further on this topic on a time series analysis with a large dataset and can use an econometrical model.

## Reference

- Abate, M., Christidis, P., & Purwanto, A. J. (2020). Government support to airlines in the aftermath of the COVID-19 pandemic. *Journal of Air Transport Management*, 89, 101931. <https://doi.org/10.1016/j.jairtraman.2020.101931>
- Adiga, A., Venkatramanan, S., Peddireddy, A., Telionis, A., Dickerman, A., Wilson, A., Bura, A., Warren, A., Vullikanti, A., Klahn, B. D., Mao, C., Xie, D., Machi, D., Raymond, E., Meng, F., Barrow, G., Baek, H., Mortveit, H., Schlitt, J., ... Orr, M. (2020). *Evaluating the impact of international airline suspensions on COVID-19 direct importation risk*. 8.
- Ahmed, W. (2020, March 22). Economic fallout: Pakistan's aviation sector

- braces for Rs25b loss amid COVID-19 travel ban. *The Express Tribune*. <http://tribune.com.pk/story/2182013/2-economic-fallout-pakistans-aviation-sector-braces-rs25b-loss-amid-covid-19-travel-ban>
- Alo, J. N. (2020a, March 16). Aviation nosedives on corona fallout. *The Business Standard*. <https://www.tbsnews.net/economy/aviation/aviation-nosedives-corona-fallout-56905>
- Alo, J. N. (2020b, October 2). Pandemic-hit airlines struggle to stay afloat. *The Business Standard*. <https://www.tbsnews.net/economy/aviation/pandemic-hit-airlines-struggle-stay-afloat-140560>
- Al-Tawfiq, J. A., Zumla, A., & Memish, Z. A. (2014). Travel implications of emerging coronaviruses: SARS and MERS-CoV. *Travel Medicine and Infectious Disease*, 12(5), 422–428. <https://doi.org/10.1016/j.tmaid.2014.06.007>
- Anurag, K. (2020, June 3). IndiGo, world's biggest buyer of Airbus A320neo jets, will continue to add planes to its fleet despite Covid squeeze. *The Economic Times*. <https://economictimes.indiatimes.com/industry/transportation/airlines/-aviation/indigo-worlds-biggest-buyer-of-airbus-a320neo-jets-will-continue-to-add-planes-to-its-fleet/articleshow/76171929.cms>
- ASQ 2020 Global Traveller Survey. (2020). ACI World Store. <https://store.aci.aero/product/asq-2020-global-traveller-survey/>
- Chinazzi, M., Davis, J. T., Ajelli, M., Gioannini, C., Litvinova, M., Merler, S., Piontti, A. P. y, Mu, K., Rossi, L., Sun, K., Viboud, C., Xiong, X., Yu, H., Halloran, M. E., Longini Jr, I. M., & Vespignani, A. (2020). The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. *Science*. <https://doi.org/10.1126/science.aba9757>
- COVID Live—Coronavirus Statistics—Worldometer. (2020, November 18). <https://www.worldometers.info/coronavirus/>
- COVID-19 and Airline Schedules | OAG. (2020). <https://www.oag.com/coronavirus-airline-schedules-data>

*COVID-19 Impact on Asia-Pacific Aviation Worsens.* (2020).  
<https://www.iata.org/en/pressroom/pr/2020-04-24-01/>

*Covid-19-airlines-liquidity-crisis.pdf.* (n.d.). Retrieved December 23, 2021,  
from <https://www.iata.org/en/iata-repository/publications/economic-reports/covid-19-airlines-liquidity-crisis/>

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage publications.

Grant, J. (2020, June 29). *OAG Coronavirus Update – Week Twenty Four The Fastest Week of Recovery as Airlines Prepare for Summer.*  
<https://www.oag.com/blog/oag-coronavirus-update-week-twenty-four>

Hoque, M. (2020, November 4). Airlines in Bangladesh counting huge losses amid COVID-19 shutdown. *Unb.Com.Bd.* <https://unb.com.bd/category/Special/airlines-in-bangladesh-counting-huge-losses-amid-covid-19-shutdown/49227>

Iacus, S. M., Natale, F., & Vespe, M. (2020). Flight restrictions from China during the COVID-2019 Coronavirus outbreak. *ArXiv:2003.03686 [Physics, Stat]*. <http://arxiv.org/abs/2003.03686>

Ibrahim, S. (2014, September 22). *Middle East Respiratory Syndrome Corona Virus (MERS-CoV) and its Implications on Pandemic Planning.* SPE Middle East Health, Safety, Environment & Sustainable Development Conference and Exhibition. <https://doi.org/10.2118/170438-MS>

Imran Khan wants to restructure PIA. (2020, June 9). *The Nation.*  
<https://nation.com.pk/09-Jun-2020/imran-khan-wants-to-restructure-pia>

India mulls up to \$1.6 billion rescue plan for aviation sector after coronavirus. (2020, March 19). *The Economic Times.* <https://economictimes.indiatimes.com/industry/transportation/airlines/-aviation/india-mulls-up-to-1-6-billion-rescue-plan-for-aviation-sector-after-coronavirus/articleshow/74702715.cms>

IndiGo lost 22cr daily in 6 months, CEO says they are “impatiently” waiting

for the future—ET TravelWorld. (2020). *ETTravelWorld.Com*. <https://travel.economictimes.indiatimes.com/news/aviation/domestic/indigo-lost-22cr-daily-in-6-months-ceo-says-they-are-impatiently-waiting-for-the-future/78947831>

Khan, N., Fahad, S., Faisal, S., & Naushad, M. (2020). *Quarantine Role in the Control of Corona Virus in the World and Its Impact on the World Economy* (SSRN Scholarly Paper ID 3556940). Social Science Research Network. <https://doi.org/10.2139/ssrn.3556940>

Khan, N., & Faisal, S. (2020). *Epidemiology of Corona Virus in the World and Its Effects on the China Economy* (SSRN Scholarly Paper ID 3548292). Social Science Research Network. <https://doi.org/10.2139/ssrn.3548292>

Koshle, H., Kaur, R., & Basista, R. (2020). *Breakdown of Business and Workers in India: Impact of Corona Virus* (SSRN Scholarly Paper ID 3557544). Social Science Research Network. <https://doi.org/10.2139/ssrn.3557544>

Kotoky, A. (2020, September 16). Indian airlines seek \$1.5 billion interest-free credit line from Modi govt. *ThePrint*. <https://theprint.in/economy/indian-airlines-seek-1-5-billion-interest-free-credit-line-from-modi-govt/504303/>

Lee, G. O. M., & Warner, M. (2005). Epidemics, labour markets and unemployment: The impact of SARS on human resource management in the Hong Kong service sector. *The International Journal of Human Resource Management*, 16(5), 752–771. <https://doi.org/10.1080/09585190500083202>

Majumder, A. (2020, July 20). IndiGo to cut 10% workforce to control impact of Covid-19 pandemic. *Business Standard India*. [https://www.business-standard.com/article/companies/indigo-to-cut-10-workforce-to-control-impact-of-covid-19-pandemic-120072001280\\_1.html](https://www.business-standard.com/article/companies/indigo-to-cut-10-workforce-to-control-impact-of-covid-19-pandemic-120072001280_1.html)

Mason, K. J. (2005). Observations of fundamental changes in the demand for aviation services. *Journal of Air Transport Management*, 11(1), 19–25. <https://doi.org/10.1016/j.jairtraman.2004.11.007>

- Mulfati, J. (2021, January 4). *Coronavirus News: Regular Updates on COVID-19's Impact on the Airline Industry*. APEX. <https://apex.aero/articles/coronavirus/>
- Qiu, W., Chu, C., Mao, A., & Wu, J. (2018). The Impacts on Health, Society, and Economy of SARS and H7N9 Outbreaks in China: A Case Comparison Study. *Journal of Environmental and Public Health*, 2018, e2710185. <https://doi.org/10.1155/2018/2710185>
- Rai, N. (2020, November 3). Covid threatens to ground India's aviation industry. *BBC News*. <https://www.bbc.com/news/world-asia-india-54729074>
- Sajid, I. (2020, March 14). *Coronavirus causes over \$15M loss to Pakistan airlines*. <https://www.aa.com.tr/en/asia-pacific/coronavirus-causes-over-15m-loss-to-pakistan-airlines/1766122>
- Santos, D. (2020, March 27). How Airports Globally are Responding to Coronavirus (Updated Frequently). *Aislelabs*. <https://www.aislelabs.com/blog/2020/03/27/how-airports-globally-are-responding-to-coronavirus-updated-frequently/>
- Shakil, F. (2020, October 19). Pakistan to clip the wings of national airline. *Asia Times*. <https://asiatimes.com/2020/10/pakistan-to-clip-the-wings-of-national-airline/>
- Sobie, B. (2021). *Impact of COVID--19 on CAREC Aviation and Tourism*. Asian Development Bank. <https://doi.org/10.22617/SPR210019-2>
- Sri Lanka cabinet clears for state support for Coronavirus-hit SriLankan Airlines. (2020, April 4). *EconomyNext*. <https://economynext.com/sri-lanka-cabinet-clears-for-state-support-for-coronavirus-hit-srilankan-airlines-69262>
- Sri Lanka's aviation industry to lose USD 715 mn due to COVID-19. (2020, April 27). *Newsfirst*. <https://www.newsfirst.lk/2020/04/27/sri-lankas-aviation-industry-to-lose-usd-715-mn-due-to-covid-19/>
- SriLankan Airlines completes a post COVID-19 traveler sentiment survey*. (2020, March 9). SriLankan Airlines. [https://www.srilankan.com/en\\_uk/corporate/news-details/359](https://www.srilankan.com/en_uk/corporate/news-details/359)

- Wilder-Smith, A., Chiew, C. J., & Lee, V. J. (2020). Can we contain the COVID-19 outbreak with the same measures as for SARS? *The Lancet Infectious Diseases*, 20(5), e102–e107. [https://doi.org/10.1016/S1473-3099\(20\)30129-8](https://doi.org/10.1016/S1473-3099(20)30129-8)
- Wilder-Smith, A., Paton, N. I., & Goh, K. T. (2003). Short communication: Low risk of transmission of severe acute respiratory syndrome on airplanes: the Singapore experience. *Tropical Medicine & International Health*, 8(11), 1035–1037. <https://doi.org/10.1046/j.1360-2276.2003.01133.x>
- Xinhua. (2020, September 9). *Pakistani aviation industry bounces back after COVID-19 losses: Authority—Xinhua | English.news.cn*. [http://www.xinhuanet.com/english/asiapacific/2020-09/09/c\\_139355115.htm](http://www.xinhuanet.com/english/asiapacific/2020-09/09/c_139355115.htm)
- Yin, R. K. (2003). Case study research. Design and methods. *Appl. Soc. Res. Methods Ser*, 5.